OSPI Draft Recommendations for Improving Student Achievement in Math and Science

Presented by:
Alan Burke, Ed.D.
Deputy Superintendent of K-12 Education
Office of Superintendent of Public Instruction

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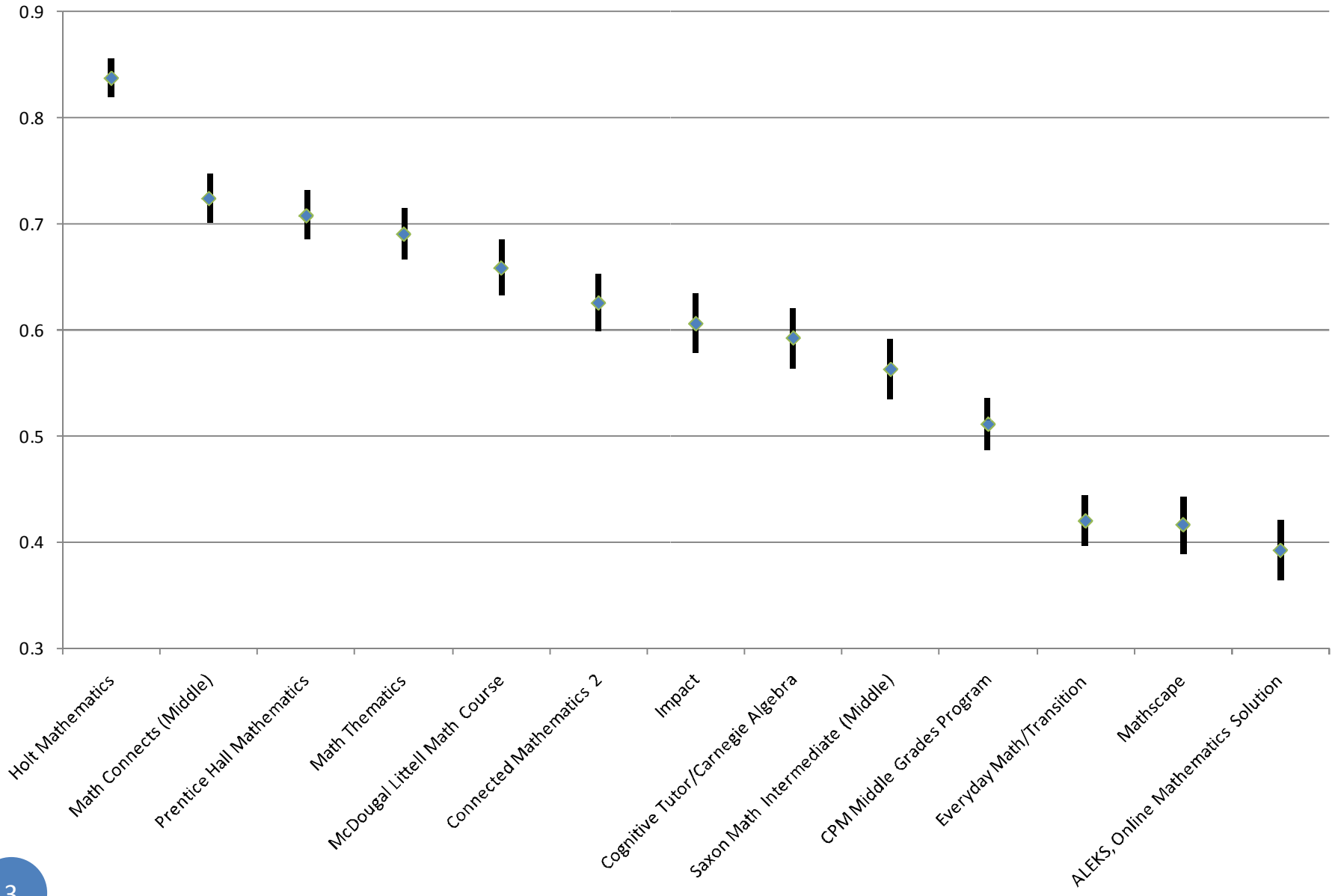
Recommendation #1

Focus on improving core classroom instruction in mathematics and science.

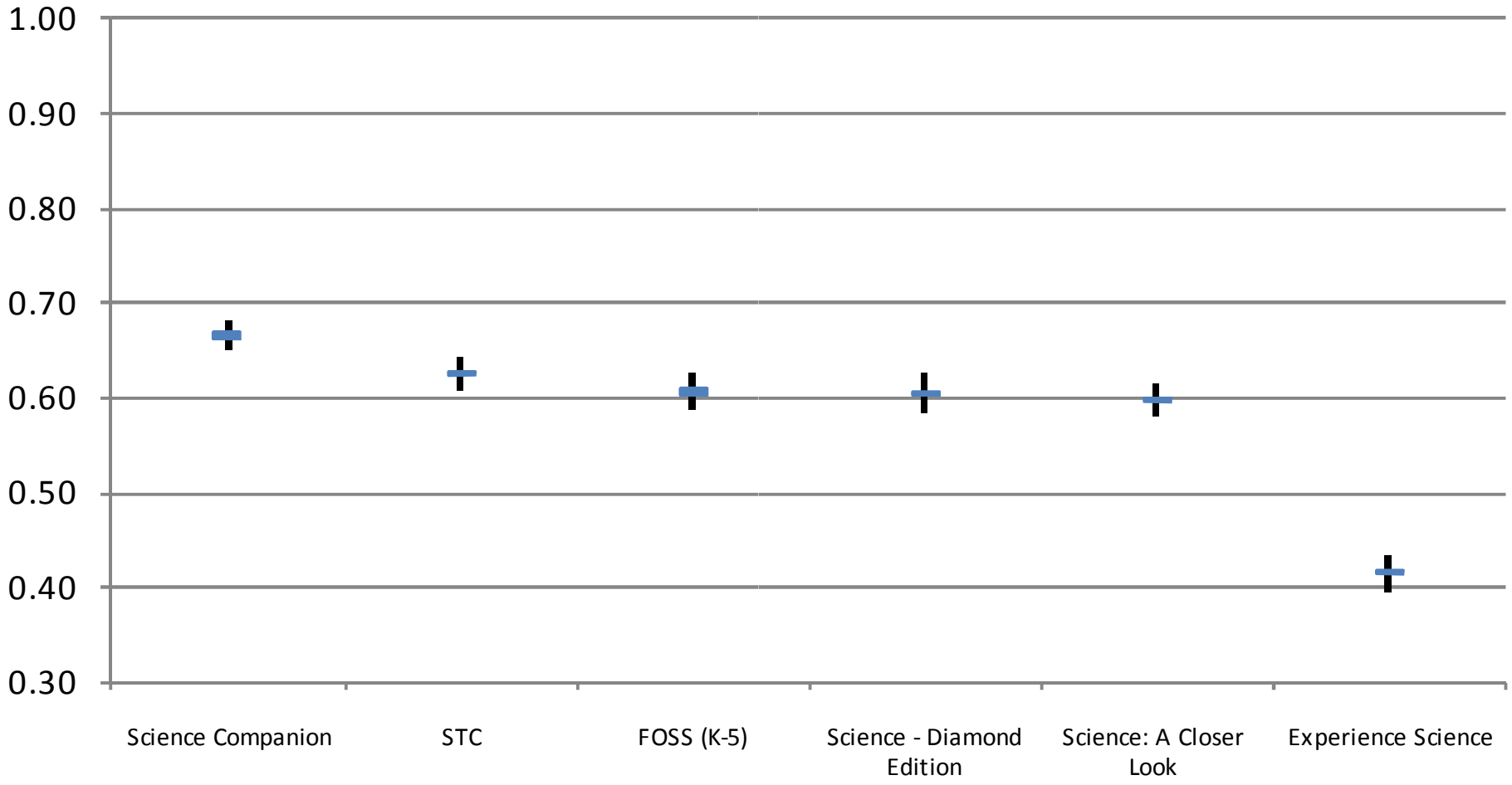
A. **Align with common core standards and assessments and provide funds to support the purchase of textbooks and instructional materials that are highly aligned to standards in math and science.**

- Use Common Core Standards in mathematics and revised Washington K-12 Science Standards as foundational standards documents.

Middle School Composite Scores with 95% Confidence Intervals



Elementary School Composite Scores with 95% Confidence Intervals



Recommendation #1 (cont.)

Focus on improving core classroom instruction in mathematics and science.

B. **Develop an online, formative assessment system for math and science that will:**
   1. Inform instruction.
   2. Identify student strengths and weaknesses on skills necessary for success on the MSP and HSPE, and link to instructional resources designed to remedy weaknesses. Information would be available to teachers, students and parents.

Recommendation #2

Increase the number and quality of entering math and science teachers by:

- **Improving pre-service training, focusing particularly on elementary school teachers.**
- **Streamlining rules that govern granting teaching certification for math and science professionals who have a desire to change careers and enter teaching.**
- **Recruit math and science majors to become teachers.**

Recommendation #3

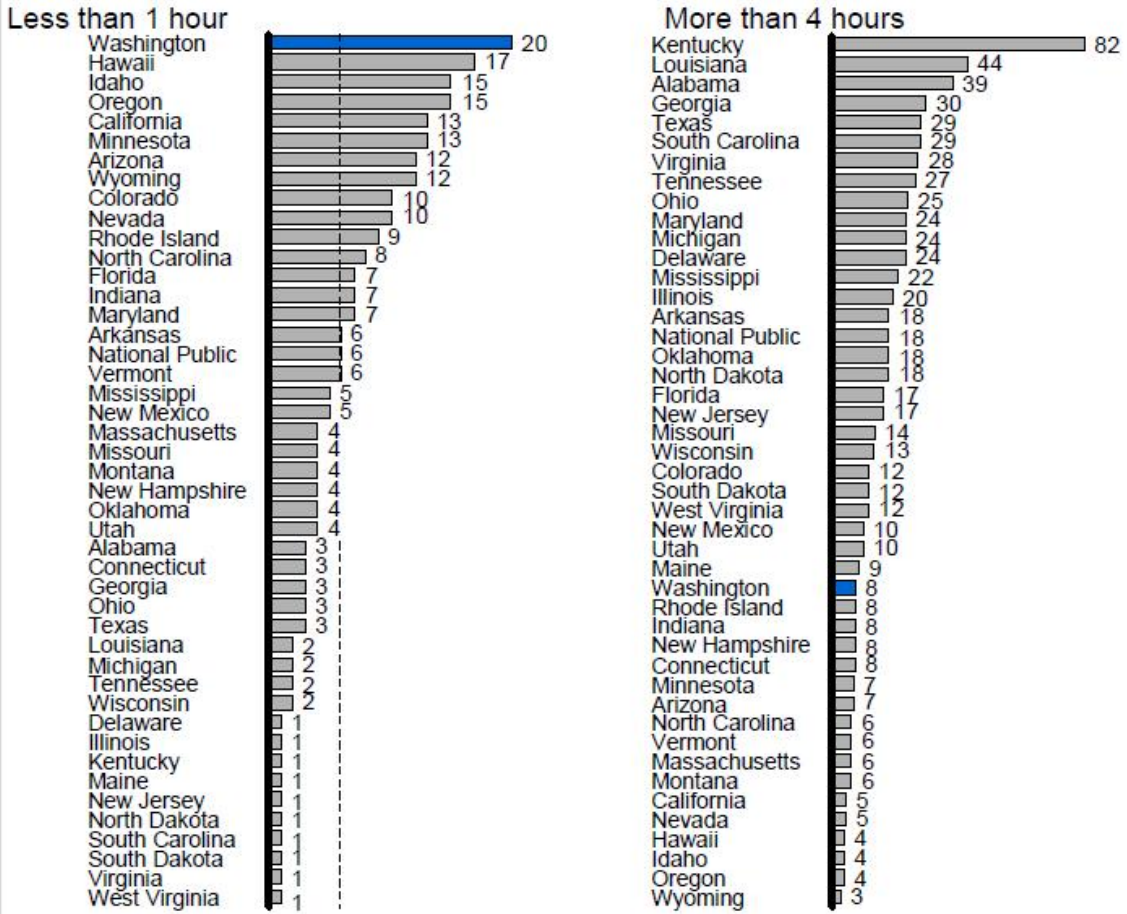
Recommend that science be taught at minimum according to the guidance below:

- **100 minutes per week in Grades 1 and 2**
- **150 minutes per week in Grades 3–5**
- **200 minutes per week (or one instructional period per day) in Grades 6–8**

1C 20% of Washington 4th grade teachers reported teaching less than one hour of science per week

Percent of teachers giving response to question: About how much time in total do you spend with this class on science instruction in a typical week? 2005

Percent



- 20% of 4th grade teachers reported spending less than one hour per week teaching science
- Washington had the highest proportion of teachers teaching less than one hour of science of all states
- Only 8% of teachers reported spending more than four hours per week teaching science

SOURCE: NAEP, 4th grade teachers

Recommendation #4

Support district implementation of stronger math and science programs by increasing professional development of teachers through leveraging public and private resources to expand statewide system improvement initiatives.

- Increase emphasis on the current system of math and science coaches.
- Widespread implementation of the Mathematics System Improvement Framework .
  - Currently utilized with districts in improvement.
  - Based K-12 Reading Model and a RTI approach for providing individualized student academic support.
- Expansion of existing private/public partnerships (e.g., LASER) and collaborate with the new Partnership for Learning/STEM Center.
- Development of CTE equivalency courses aligned to standards in math and science.
- Provide compensatory instruction in math and science after school and during the summer.
- Expand the BEST program and/or similar induction/mentoring programs to assist new math and science teachers.

Recommendation #5

Introduce policy initiatives that will support new programs designed to promote early learning in math and science.

- Develop a math training program for early learning providers that focuses on numbers, geometry/spatial thinking, and measurement.

Recommendation #6

Make it easier for districts to join multi-district cooperatives for the purposes of beginning a STEM focused high school, irrespective of existing district boundaries, and continue to promote program development at skill centers that focus on STEM-related training.


Thank you.